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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/514,424

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Rudolf Peter Muis

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36183

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EXAMINER

ROLLAND, ALEX A

ART UNIT

PAPER NUMBER

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/514,424	Applicant(s) MUIS ET AL.	
	Examiner ALEX ROLLAND	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2, 7-20 rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/082480 to Matsunaga et al in view of US 4340011 to Wahren et al.

Matsunaga teaches a liquid dispensing apparatus which handles a minimum amount of liquid without wasting it by dispensing an exact amount of liquid while letting the liquid flow between two syringes (abstract). With reference to figure 1, the apparatus comprises a tubular dispensing means disposed substantially parallel to a horizontal substrate W (the tube connecting the two syringes). In the wall of the tube are openings including element 3 (claimed "lateral outlet opening"). The apparatus further comprises the syringes (claimed "liquid container") and L shaped conduits for carrying the liquid from the syringes to the outlets. This apparatus has specific applications for applying an adhesive or coating material including solid particles (pg. 1, lines 5-8) but could be used to deposit any material onto any substrate or coated substrate, including a nanocrystalline coated substrate. Matsunaga does not teach a plurality of lateral outlet openings distributed along the tubular dispensing means. However, Wahren teaches a device for depositing a liquid containing suspended particles (col. 2, lines 30-35) onto a substrate comprising a fountain applicator 7 (claimed "tubular dispensing means") with a plurality of passageways 55 (claimed "lateral outlet openings") and a fluid recirculation means (col. 4, line 36; col. 5, line 24; Fig. 1; Fig. 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate multiple outlets into the dispenser of Matsunaga because Wahren states that multiple

outlets are suitable for a tubular dispensing means dispensing liquid containing suspended particles.

Regarding claim 7, the tube is connected to a first syringe 5-2 (claimed "first outer end") and is closed at several points away from this point of attachment such as elements 10-2 and 10-1 (claimed "second outer end at a distal end") (Matsunaga, Fig. 1).

Regarding claim 8, 13-14, 19-20, the tube is connected to syringe 5-2 on one side and is connected to syringe 5-1 on the other side (Matsunaga, Fig. 1). The apparatus functions by having constant flow from a first syringe to a second syringe during deposition such that an appropriate amount of liquid is deposited onto a substrate and the excess liquid is directed into the second syringe (Matsunaga, pg. 12, line 10-pg. 13, line 1). Thereafter, the flow between the syringes is reversed so that the liquid collected in the second syringe is deposited onto the substrate and the excess is collected in the first syringe (Matsunaga, pg. 13, lines 1-24).

Regarding claim 9, 15, the passageways are located in the top of the tubular dispensing means (Wahren, Fig. 2).

Regarding claim 10, 16, orifices 8-1 and 8-2 comprise a portion of the tube and have a circular outer periphery in vertical cross-section as shown by its measurement of diameter (Matsunaga, pg. 10, line 24-pg. 11, line 26).

Regarding claim 11, 17, a second embodiment utilizes a pump 24 to regulate the flow through at least pipe 28 (a conduit means) (Matsunaga, pg. 20, lines 13-26 and Fig. 2).

5. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/082480 to Matsunaga et al and US 4340011 to Wahren et al in view of EP 0930641 A2 to Kiguchi et al.

Matsunaga and Wahren are discussed above but are silent as to the specifics of the substrate including movement and heating of the substrate. However, Kiguchi teaches a similar dispensing apparatus comprising a tubular dispensing means in the form of an ink-jet print head equipped with a nozzle plate having a plurality of tubular nozzles (col. 7, lines 42-53), an ink tank functioning as a liquid container (col. 7, line 33), and a pipe connecting said ink tank to said ink-jet print head functioning as a conduit means (See Fig. 1, item 27 and col. 7, line 34). The apparatus includes a drive mechanism which allows the ink-jet print head to be moved in the direction of the X- axis and Y-axis (col. 8, lines 38-50); additionally, it is possible to use an arrangement in which the substrate is moved in relation to the ink-jet print head (col. 8, line 51-col. 9, line 2); it is well established in the art that movement of the substrate in this fashion constitutes an XY table. Further, a treatment apparatus is provided which may include a compressor and heater for blowing hot air, a laser emitting diode for generating laser light, or a lamp for lamp irradiation all of which are used to heat the substrate during the coating process (col. 10, lines 19-58). Therefore, it would have been obvious to one of ordinary skill in

the art at the time of the invention to add the substrate control elements of Kiguchi to Matsunaga and Wahren because Kiguchi, Matsunaga, and Wahren are similar apparatuses and Kiguchi states that substrate control elements are useful to include in a substrate liquid deposition apparatus.

Response to Arguments

6. Applicant's arguments, filed 9/22/09, with respect to the rejection(s) of claim(s) 2-20 under 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of claim amendments and further search.

Conclusion

7. No Claims are allowed. All pending claims are rejected for the reasons set forth above.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX ROLLAND whose telephone number is (571)270-5355. The examiner can normally be reached on Monday through Friday, 9:00 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571)272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1792

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALEX ROLLAND/
Examiner, Art Unit 1792

/Michael Cleveland/
Supervisory Patent Examiner, Art Unit 1792